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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,346	03/31/2000	Michael Brauss	68671	1426

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EXAMINER

HO, ALLEN C

ART UNIT PAPER NUMBER

2882

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/539,346

Applicant(s)

BRAUSS, MICHAEL

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 and 15 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8-13 is/are objected to.
- 8) ☒ Claim(s) 1-28 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.

- 4) ☒ Interview Summary (PTO-413) Paper No(s). 11.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Claims 16-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 11.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 32 and 70. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "38" has been used to designate both upstanding guide (page 13, line 7) and free ends (page 13, line 10). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

- (1) "defraction" should be replaced by --diffraction--.
- (2) "elongate" should be replaced by --elongated--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Khutoryansky *et al.* (U. S. Patent No. 5,636,259).

With regard to claim 1, Khutoryansky *et al.* disclosed an apparatus having an x-ray head (112) adjustable in at least three mutually transverse axes for directing x-rays from different positions toward a part, the apparatus comprising: a frame (110) for supporting the x-ray head; an x-axis adjustment mount (144) of the frame operably connected to the head for adjusting the head in an x-axis fore and aft direction (A); a y-axis adjustment mount (394) of the frame operably connected to the head for adjusting the head in a y-axis lateral direction (L); and a z-axis adjustment mount (154) of the frame operably connected to the head for adjusting the head in a z-axis vertical direction (C).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khutoryansky *et al.* (U. S. Patent No. 5,636,259) as applied to claim 1 above.

With regard to claim 4, Khutoryansky *et al.* disclosed the apparatus of claim 1, wherein the x and z adjustment mount include linear drives (150, 152) for linearly adjusting the head.

However, Khutoryansky *et al.* did not teach that the y adjustment mount includes a linear drive.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a linear drive to the y adjustment mount, since a person would be motivated to automate the movement in order to make the adjustment more accurate.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruud (U. S. Patent No. 5,148,458) in view of Khutoryansky *et al.* (U. S. Patent No. 5,636,259).

With regard to claim 1, Ruud disclosed an apparatus having an x-ray head (26).

However, Ruud did not teach: (1) a frame for supporting the x-ray head; (2) an x-axis adjustment mount of the frame operably connected to the head for adjusting the head in an x-axis fore and aft direction; (3) a y-axis adjustment mount of the frame operably connected to the head for adjusting the head in a y-axis lateral direction; and (4) a z-axis adjustment mount of the frame operably connected to the head for adjusting the head in a z-axis vertical direction.

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Khutoryansky *et al.* taught providing three-axis (x, y, z) adjustments to an x-ray head.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a frame for supporting the x-ray head, since a person would be motivated to provide structural rigidity to the x-ray head in order to protect it from damage. Furthermore, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a mount of the frame that provides adjustments in three mutually transverse directions, since a person would be motivated to bring the target area of a part into the focal point of the x-ray beam.

10. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruud (U. S. Patent No. 5,148,458) and Khutoryansky *et al.* (U. S. Patent No. 5,636,259) as applied to claim 1 above, further in view of Curry (U. S. Patent No. 3,445,655).

With regard to claim 2, Ruud and Khutoryansky *et al.* disclosed the apparatus of claim 1, comprising a frame for supporting the x-ray head.

However, these references do not teach that the frame includes a fixture portion adapted to removably attach the frame to a part to allow the x-ray head to be used on parts in the field.

Curry disclosed a mobile x-ray apparatus that comprises a fixture portion (4) adapted to removably attach to a part in the field.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the apparatus with a fixture portion adapted to removably attach the frame to a part, since a person would be motivated to measure the stress state of a part while it is in service in order to predict how long it can stay in service.

With regard to claim 3, Ruud, Khutoryansky *et al.*, and Curry disclosed the apparatus of claim 2, wherein the fixture portion includes adjustable clamps (16, 18) for removably attaching the frame to different sizes of cables with the adjustable clamps comprising the y-axis adjustment mount to allow the head to be located at different positions along the length of the cable.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruud (U. S. Patent No. 5,148,458) and Khutoryansky *et al.* (U. S. Patent No. 5,636,259) as applied to claim 1 above.

With regard to claim 4, Ruud and Khutoryansky *et al.* disclosed the apparatus of claim 1, wherein the x and z adjustment mount include linear drives (150, 152) for linearly adjusting the head.

However, these references not teach that the y adjustment mount includes a linear drive.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a linear drive to the y adjustment mount, since a person would be motivated to automate the movement in order to make the adjustment more accurate.

12. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruud (U. S. Patent No. 5,148,458) and Khutoryansky *et al.* (U. S. Patent No. 5,636,259) as applied to claim 1 above, and further in view of Ergun *et al.* (U. S. Patent No. 6,007,243).

With regard to claim 5, Ruud and Khutoryansky *et al.* disclosed the apparatus of claim 1, wherein the frame and x, y, z adjustment mounts are integrated in a portable x-ray diffraction unit for being transported to different part sites.

However, these references do not teach that the apparatus further comprising a stand distinct from the portable unit for supporting the unit at a desired part site.

Ergun *et al.* disclosed a portable x-ray apparatus comprising a stand (12) for supporting the unit at a desired part site.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a stand for supporting the unit, since a person would be motivated provide a stand that can provide mobility to the portable x-ray diffraction unit.

With regard to claim 6, Ruud, Khutoryansky *et al.*, and Ergun *et al.* disclosed the apparatus of claim 5, wherein the unit and the stand having an adjustable attachment (Ergun *et al.* 24) therebetween to allow the unit and stand to be shifted to different positions relative to each other.

With regard to claim 7, Ruud, Khutoryansky *et al.*, and Ergun *et al.* disclosed the apparatus of claim 5, wherein the head includes detectors (Ruud 30) for sensing the x-rays off from the part, and a controller (Ruud 36) connected to the head for receiving signals from the detectors and including circuitry adapted to generate maps of a strength related characteristic of the part at the part site with the strength related characteristic being based on the received signal (Ruud column 8, lines 25-36).

Allowable Subject Matter

13. Claims 8-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claims 8-10, although the prior art discloses an apparatus having an x-ray head adjustable in at least three mutually transverse axes directing x-rays from different positions toward a part, the apparatus comprising a frame, it fails to teach or fairly suggest that the head includes an elongated housing having a longitudinal axis, and the frame includes an r-axis adjustment mount operably connected to the head for adjusting the head in an r-axis rotary direction about the housing axis to allow the head to direct x-rays at contoured parts.

With regard to claims 11-13, although the prior art discloses an apparatus having an x-ray head adjustable in at least three mutually transverse axes directing x-rays from different positions toward a part, it fails to teach or fairly suggest that the apparatus includes a touch sensor which is shifted into engagement with the part with the head a predetermined distance from the part in the z-axis direction, and a controller signaled by the touch sensor for repeatable locating of the head at the predetermined distance from the part after use of the sensor.

15. Claims 14 and 15 are allowed.

16. The following is an examiner's statement of reasons for allowance:

With regard to claims 14 and 15, although the prior art discloses an apparatus for directing x-rays at parts with curved surfaces, the apparatus comprising an x-ray head having an elongated housing including a longitudinal axis thereof and a frame for supporting the x-ray head, it fails to teach or fairly suggest an adjustment mount of the frame which allows the head to undergo rotary movement about the longitudinal axis thereof to substantially keep the head at a predetermined distance from a curved surface of a part at which x-rays are directed at various positions along the part curved surface.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- (1) Morgan *et al.* (U. S. Patent No. 5,614,720) disclosed a mobile x-ray apparatus for nondestructively inspecting components of an operating system.
- (2) Korhonen *et al.* (U. S. Patent No. 5,125,016) disclosed an x-ray apparatus for measuring stresses.
- (3) Ruud (U. S. Patent No. 4,686,631) disclosed a method for determining internal stresses in polycrystalline solids.
- (4) Ogiso (U. S. Patent No. 3,868,506) disclosed an x-ray diffraction goniometer.
- (5) Habermehl *et al.* (U. S. Patent No. 4,283,629) disclosed a non-destructive method and apparatus for testing materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

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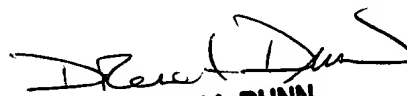
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (703) 308-4858. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Allen C. Ho
Examiner
Art Unit 2882

ACH
June 16, 2003


DREW A. DUNN
PRIMARY EXAMINER